

Use Case 14	Creation of Metadata Elements Using LOINC
Case:	DATA ELEMENT AND VALUE DOMAIN CREATION AND USE IN DESCRIBING LABORATORY TESTS AND RESULTS
Background:	Data Elements are needed to describe the parts of lab tests. The Data Elements must enable applications to use the metadata to reconstruct LOINC terms and possibly to recover corresponding LOINC Codes.
Problem:	<p>LOINC formatted names have a six part structure:  <b>COMPONENT:PROPERTY:TIME ASPECT:SYSTEM:SCALE:METHOD</b></p> <p>In caDSR, a Data Element is needed for each part of the formatted LOINC name.</p> <p>caDSR desires to draw LOINC terminology from EVS. However in EVS, LOINC terms are not consistently identified as to which of these six name elements the term belongs. Furthermore not all terms in the LOINC versions in EVS provide English language strings for LOINC terms: only abbreviations are available in some cases. Finally The EVS must be able to provide definitions for each of the LOINC formatted name components and for the valid filler terms that may be used in formatted LOINC names.</p> <p>caDSR needs to be able to retrieve from EVS English terms all LOINC concepts that are permitted fillers for <b>COMPONENT</b>, <b>PROPERTY</b>, etc. The LOINC terms retrieved for <b>COMPONENT</b> would then be used as the Value Domain list for <b>COMPONENT</b>.</p> <p>It should be determined if the LOINC filler values for the parts of the formatted LOINC name are independent or dependent. For example if the filler values for <b>PROPERTY</b> are different if the filler value given to <b>COMPONENT</b> is <b>GLUCOSE</b> than it would be for <b>POTASIUM</b>, then the filler values are dependent. Some means, such additional roles, might be able to deal with dependence.</p>
Solution:	<p>Unclear.</p> <p>In NCI Terminology Server EVS might extend the LOINC namespace by :</p> <ul style="list-style-type: none"> <li>• Creating a <u>Property</u> for LOINC concepts with a proper English name. Such a Property might follow NCI convention and be called <i>Display_Name</i> or caDSR convention and be called <i>Alternative_Name</i>.</li> <li>• Create a <u>Role is LOINC_Name_Filler</u> with the domain and range of LOINC. Filler values for the Role would be one of these concepts: COMPONENT, PROPERTY, TIME,</li> </ul>

	<p>ASPECT, SYSTEM, SCALE, or METHOD. This role would indicate in which component(s) of LOINC formatted names a concept can legally occur.</p> <ul style="list-style-type: none"> <li>It is not clear how EVS ought to address the requirement that filler values for one component be tailored to suit the filler used in a different component of the LOINC formatted name. Possibly a RoleGroup could be used in some way. However since the EVS vocabulary logics do not support IFF or other logical operators, or One_Of constructs, meeting this requirement will probably require logic to be implemented in caDSR.</li> </ul>
Actions:	Continue joint EVS-caDSR analysis